COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 23.09.1997
COM(97) 442 final

97/0231 (CNS)

Proposal for a

COUNCIL DECISION

on the agreement between the European Community, the European Space Agency and the European Organisation for the Safety of Air Navigation on a European contribution to the development of a Global Navigation Satellite System

(presented by the Commission)

Explanatory Memorandum

1. General Background

In December 1994, the Council adopted a Resolution[1] on the European contribution to a global navigation satellite system (GNSS). This Resolution invited the Commission, inter alia, to initiate or support work on the development and implementation of a European complement to existing systems and to carry out preparatory work for the next generation world-wide system (GNSS2) for civil use.

Since the adoption of the Council Resolution, a number of actions have been carried out. One of these actions involves the drafting of a Co-operation Agreement[2] with the European Space Agency and EUROCONTROL (contained herein) to guarantee a co-ordinated approach to the development of the European contribution to a global navigation satellite system.

This agreement would set the backdrop for the implementation of the Action Plan for the achievement of the effective, safe and economic use of satellite-generated signals for navigation. This plan is being prepared by the Commission with support of a high level group of representatives from Member States, international organisations, users, and industry and will come forward in the Autumn. Furthermore, the Council and the Parliament also adopted Community guidelines for the development of the Trans-European Transport Network[3] in June 96. These guidelines justify Community action in the navigation and positioning sector.

The above-mentioned actions have led to the launching of a European implementation programme containing a regional augmentation to the US Global Positioning System (GPS) and the Russian GLONASS. This augmentation is a contribution to the first generation (GNSS1) called the "European Geostationary Navigation Overlay Service" (EGNOS) and will be consistent with the local augmentations implemented for specific requirements. Exploratory work for GNSS2 has also begun.

The attached proposal for a Decision is required to provide the means to implement a European contribution to a global system. In a situation of potential US dominance of the satellite navigation market, the agreement will help to protect European interests and facilitate the realisation of the full potential of satellite based technology for navigation. It would also facilitate the negotiation of international agreements at political and technical level to ensure interoperability of regional contributions to the system. In this vein, in the framework of the New Trans-Atlantic Agenda, a working group has been set up consisting of delegates from the European Union and the United States to discuss GNSS. Regarding cooperation with the Russian Federation, a second working group is about to be set up in order to elaborate a joint approach for the implementation of GNSS.

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1 Council Resolution 94/C379 of 19.12.94

2. In accordance with the Decision on the negotiating guidelines adopted by the Council on 17.6.96.

3 O.J. N° L228 of 9.9.1996.

The agreement also provides a co-ordinating mechanism to ensure the convergence of the various efforts required to meet the overall objectives for system development. Similarly, contact with other countries and regions of the world may be required in order to support GNSS development.

2. Coherence with other Community Policies

The promotion of a navigation and positioning network in Europe is a central part of the Community's policy to ensure the full integration of land, sea and air transport infrastructure for safe, seamless, economic and environmentally friendly navigation. Satellite navigation is now becoming a reality by virtue of the following legislation and Community actions:

- Council Decision of 25/2/92 on radio navigation systems for Europe (92/143/EEC)

- Communication from the Commission on a common policy for safe seas (COM (93)66 final);

- Council Resolution (94/C/379/02) of 19 December 1994 on the European contribution to the development of a global navigation satellite system (GNSS);

- Communication from the Commission on a European approach to satellite navigation services (COM (94) 248 final);

- Communication from the Commission to the Council and the European Parliament on the European Union and Space (COM (96) 617 final);

- Decision of the European Parliament and the Council on Community Guidelines for the Development of the Trans-European Transport Network (1692/96/EC of 9/9/96);

- Council Decision of 21/6/96 authorising the Commission to negotiate an agreement between the Community, the European Space Agency and EUROCONTROL on the European contribution to a Global Navigation Satellite System. (8414/96)

The agreement between the Community, the European Space Agency and EUROCONTROL for the European contribution to GNSS will contribute to the achievement of Community objectives, such as the completion of the internal market and the strengthening of economic and social cohesion. The setting up of a satellite navigation system should also help improve transport safety and the long term sustainable mobility of people and goods throughout Europe. It should also ensure the creation of an efficient European contribution to a GNSS. The guidelines for the Trans-European Transport network[4] recognise the importance of implementing a navigation and positioning network (Art. 17) by making use of satellite technology. The

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Communication on Space policy.[5] also underlined the strategic importance of satellite navigation for industry and identified the need for a co-ordinating structure to better associate available resources.

3. Contents of the Proposed Agreement

Article 1

outlines the basic objective for the co-operation agreement, notably to be the establishment of a focal point for all activities pertaining to satellite navigation and positioning in Europe.

Article 2

defines GNSS 1 and 2 and EGNOS. These definitions are expanded in the technical annex to the agreement.

Article 3

Breaks down the co-operation framework into three level:

- co-operation for GNSS1;
- Co-ordination for the attainment of full operational capability;
- Liaison for GNSS2.

Article 4

outlines the role and scope of the activities to be carried out by each party to the agreement.

Article 5

describes co-ordination between the parties to the agreement, mentioning the establishment of a Secretariat for technical support to European Tripartite activity.

Article 6

describes the policy of the three organisations regarding the management of GNSS information.

Article 7

describes the position of the three organisations regarding property rights.

Article 8

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5 COM (96) 617 final

provides a commitment of the three parties to make the financial arrangements necessary to implement the agreement.

Article 9

deals with contracting procedures.

Article 10

provides a mechanism for liability;

Article 11

considers applicable procedures in the case of force majeur

Article 12

describes the arrangements for public relations activities.

Article 13

outlines the conditions applicable for the updating and amendment of the Agreement.

Article 14

outlines that the agreement is open to other potential contributors

Article 15

describes the procedures applicable for arbitration

Article 16

provides that annex one and two are an integral part of the agreement.

Article 17

outlines the timescales for the agreement and the conditions for termination of the Agreement.

Annex 1

set out the general scope of co-operation between the parties.

Annex 2

Gives a comprehensive outline of each party's contribution to the system.

4. Conclusions

The Commission considers that the draft Agreement is acceptable for the Community and meets its mandate. Accordingly, it proposes that the Council:

- approves the results of the negotiations

- decides to sign the Agreement and
- initiates the procedures for its conclusion.

It therefore presents herewith a Draft Council Decision concluding the Agreement between the European Community, the European Space Agency and EUROCONTROL on a European Contribution to the Development of a Global Navigation Satellite System (GNSS).

PROPOSAL FOR A COUNCIL DECISION CONCERNING

THE AGREEMENT BETWEEN THE EUROPEAN COMMUNITY, THE EUROPEAN SPACE AGENCY AND THE EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION

ON A EUROPEAN CONTRIBUTION TO THE DEVELOPMENT OF A GLOBAL NAVIGATION SATELLITE SYSTEM.

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 75 in conjunction with Article 228 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Having regard to the European Space Agency Council approval of this Agreement under article XIV of its Convention

Having regard to Measure 83/22 of the EUROCONTROL Permanent Commission pursuant to Article 11 of the EUROCONTROL convention.

Whereas the agreement between the European Community, the European Space Agency and the European Organisation for the Safety of Air Navigation on a European contribution to the development of a global navigation satellite system should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The agreement between the European Community, the European Space Agency and the European Organisation for the Safety of Air Navigation on a European contribution to the development of a global navigation satellite system is hereby approved on behalf of the European Community.

The text of the Agreement as well as the technical annexes thereto are attached to this Decision.

Article 2

The President of the Council shall, on behalf of the Community, deposit the act of approval provided for in the agreement.

Done in Brussels,

For the Council

DRAFT

AGREEMENT

between

THE EUROPEAN COMMUNITY

THE EUROPEAN SPACE AGENCY

and

THE EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION

on a

EUROPEAN CONTRIBUTION

to the development of a

GLOBAL NAVIGATION SATELLITE SYSTEM

The European Community (hereinafter referred to as "the EC") represented by .....,

and

The European Space Agency established by the Convention of the European Space Agency opened for signature in Paris on 30 May 1975 (hereinafter referred to as "ESA"), represented by its Director General, Jean-Marie Luton;

and

the European Organisation for the Safety of Air Navigation established by the Convention relating to Co-operation for the Safety of Air Navigation of 13 December 1960, as amended by the Protocol of 12 February 1981 (hereinafter referred to as "EUROCONTROL"), represented by its Director General, Yves Lambert;

(hereinafter collectively referred to as "the Parties")

TAKING NOTE that studies on navigation by satellite are evolving from research to the definition of an operational application system and that these have reached a sufficient degree of maturity for a European contribution to a global navigation satellite system thereby enhancing the involvement of European industry in this field;

TAKING NOTE of the interest expressed by European Governments in a European contribution to satellite navigation as expressed on the occasion of the European Civil Aviation Conference meeting of 10 June 1994;

HAVING REGARD to the Communication from the European Commission on satellite navigation services of 14 June 1994, the European Parliament Resolution of 13 November 1994, the Resolution of the Council of the European Union of 19 December 1994 on the European contribution to the development of a Global Navigation Satellite System (GNSS), the Conclusion of the Council of the European Union of 14 March 1995 inviting the European Commission to contribute to the implementation of the Global Navigation Satellite System (GNSS 1) by taking all necessary measures for the leasing of the Inmarsat III transponders, and the Decision by the Council **of the European Union** and the European Parliament on 23 July 1996 on the guidelines for the development of the Trans European Transport Network;

HAVING REGARD to ESA Council approval of this Agreement on ..... under Article XIV.1 of the Convention of the European Space Agency;

HAVING REGARD to Measure No. 83/22 taken by the EUROCONTROL Permanent Commission on 31 January 1995, pursuant to Article 11 of the Convention relating to co-operation for the Safety of Air Navigation as amended on 12 February 1981;

RECOGNISING the necessity of coordinating further their activities in order to ensure the credibility and effectiveness of a European involvement in this domain, in particular with regard to the **development** of a satellite navigation system using Inmarsat III navigation payloads for which the Parties submitted a proposal entitled the European Geostationary Navigation Overlay Service (EGNOS) which was accepted by the Inmarsat Council **on 21 November 1994 and also on 15 November 1995**;

HAVE AGREED as follows:

ARTICLE 1 - PURPOSE

The purpose of this Agreement is to establish co-operation between the Parties with a view to providing a European contribution to the development of a Global Navigation Satellite System. This concerted effort is aimed at placing Europe in a position to allow provision for a satellite navigation service which shall, as far as practicable, satisfy the requirements of civil users for operational use independently of other means of radio navigation and positioning.

ARTICLE 2 - DEFINITIONS

For the purpose of this Agreement, the following definitions shall apply:

Global Navigation Satellite System (GNSS)

GNSS is a satellite based world-wide position, velocity, and time determination system which fulfils on a permanent basis potential user requirements for civil applications.

GNSS1

GNSS1 is an initial implementation of GNSS, based upon the existing **United States of America** and Russian military satellite navigation systems, augmented by civil systems, designed to provide the user with sufficient independent monitoring of the whole system.

GNSS2

GNSS2 is a world-wide civil navigation satellite system to be internationally controlled and managed, which meets the requirements of all categories of users for position, velocity and time determination.

European Geostationary Navigation Overlay Service (EGNOS)

EGNOS is a European augmentation of existing satellite navigation and positioning systems, using geostationary satellites with the aim of enhancing the performance of these systems over Europe and **providing a capability** over the whole geostationary broadcast areas. EGNOS is a European component of GNSS1.

ARTICLE 3 - SCOPE

The scope of cooperation between the Parties is covered by this Agreement and further detailed in Annexes 1 and 2. It covers the following activities:

a) the development **and validation of an** operational capability of a European contribution to GNSS1, using existing satellite systems and any appropriate augmentation to fulfil users requirements ;

b) coordination of actions of each Party for the attainment of a full operational capability of GNSS1;

c) in parallel with GNSS1, preparatory work for the definition and design of GNSS2.

ARTICLE 4 - CONTRIBUTIONS OF THE PARTIES TO GNSS-1

The Parties shall take the appropriate measures, in accordance with their respective rules and procedures, and shall use their best endeavours, to contribute in due time to GNSS-1 as specified in Annex 2, as follows:

a) ESA shall contribute through the implementation of its Advanced Research in Telecommunication Systems (ARTES) Programme, in particular Element 9, which includes the technical developments of EGNOS and its operation for testing and technical validation purposes.

b) EUROCONTROL shall provide the civil aviation user requirements and validate the resulting system against these requirements. EUROCONTROL shall also support the European efforts to ensure that GNSS-1 is operationally acceptable for civil aviation.

c) The EC shall contribute to the consolidation of the requirements of all users and to the validation of the resulting system against such requirements, in particular **in the framework** of its TransEuropean Networks and Research and Development actions, without prejudice to the legislation on the technical harmonisation procedures such as those on aircraft and air traffic management equipment.

The EC shall, in particular, also provide for the **establishment** of **EGNOS** by taking all appropriate measures, including the leasing of geostationary transponders.

ARTICLE 5 - WORKING ARRANGEMENTS BETWEEN THE PARTIES

5.1 To ensure progressive development of their co-operation, a Joint Tripartite Committee composed of the Parties is hereby set up with the objective of monitoring the implementation of this Agreement and to formulate guidelines and coordinate common approaches towards the realisation of this Agreement. The Joint Tripartite Committee shall meet at least once a year or more frequently, if necessary, at the request of one of the parties, and shall adopt its own rules of procedure.

5.2 The Joint Tripartite Committee shall be assisted by a Secretariat to provide the day-to-day administrative support and, upon request, organise the technical support. The Parties undertake, in accordance with their respective rules and procedures, to contribute jointly to such administrative support.

5.3 The Joint Tripartite Committee shall carry out the tasks specified in this Agreement, by:

a) exchanging information on the progress made in activities related to the scope of this Agreement and exchanging relevant documentation and results emanating from the contributions of the Parties under this Agreement;

b) inviting representatives from each of the Parties to participate in meetings relating to those activities which form the basis of this Agreement;

c) exchanging information and coordinating, as far as possible, prior to contacts with non-European parties when such contacts are relevant to this Agreement;

d) formulating proposals towards arrangements necessary for the future operational service of positioning and navigation;

e) submitting proposals for the organisation of the Secretariat support.

5.4 Any change or update of the technical contents of Annexes 1 and 2 which have no impact on the scope of this Agreement, especially on its financial and operational provisions, may be approved by the Joint Tripartite Committee, by a unanimous decision.

ARTICLE 6 - EXCHANGE OF INFORMATION AND DISCLOSURE

6.1 Each Party shall exchange with the other Parties all information at their disposal which may be required for the implementation of this Agreement, subject to its own rules on exchange of information.

6.2 Except as otherwise provided, no Party shall disclose any information exchanged in connection with this Agreement to any person other than those employed by them or officially entitled to handle such information (including each Party's Member States) nor use it for commercial purposes. Such disclosure shall extend so far only as may be necessary for the purpose of this Agreement and shall be in strict confidence.

ARTICLE 7 - RIGHTS AND PROPERTIES

7.1 Each Party shall, in accordance with its own rules and procedures, administer or retain the property and commercial rights in the software, equipment and documentation which it has financed and developed within the framework of its own activities in implementing this Agreement.

7.2 Specific arrangements between the Parties may be required for joint developments made for the purpose of this Agreement.

ARTICLE 8 - FINANCIAL ARRANGEMENTS

8.1 Each Party shall ensure that the appropriate financial arrangements are made in good time and in accordance with its own procedures, in order to discharge its own responsibilities under this Agreement and Annexes.

8.2 Upon completion of the EGNOS testing and technical validation, new financial arrangements shall be required to be in place.

ARTICLE 9 - CONTRACT AUTHORITY AND PROCEDURES

All contracts required for the implementation of this Agreement and which are let by one Party shall be let in accordance with the normal procedure of that Party, without prejudice to Article 7.2 above.

ARTICLE 10 - LIABILITY

10.1 The Parties agree that, with respect to activities undertaken pursuant to this Agreement, no Party shall make any claim against the other Parties with respect to injury or death of its employees, or any person acting on its behalf, or with respect to damage of any kind to or loss of its property, caused by one of the Parties, whether such injury, death, damage or loss arises through negligence or otherwise, except in the case of gross negligence or wilful misconduct.

10.2 In the event of a claim from a third party resulting from the Parties' implementation of their respective contributions as specified in Annex 2, each Party shall only be liable to the extent that the claim relates to that Party's contribution.

10.3 The Parties agree that only the Party who has contracted with a third party in the context of the execution of the contribution of the Parties as specified in Annex 2 will be liable for any claims from this third party resulting from the contract in question.

ARTICLE 11 - FORCE MAJEURE

The Parties shall not be considered in breach of this Agreement if any failure to provide their contributions hereunder arises from or is caused by force majeure.

ARTICLE 12 - PUBLIC RELATIONS

12.1 Each Party shall undertake to coordinate with the others in advance concerning its own or joint public relations activities related to subjects covered by this Agreement.

12.2 In all relevant media activities, the role of each Party in this Agreement shall be clearly identified and mentioned.

12.3 The detailed arrangements for implementing public relations activities foreseen under this Article shall be mutually agreed.

ARTICLE 13 - AMENDMENTS

13.1 This Agreement shall only be amended by unanimous written agreement of the Parties.

13.2 Should any Party encounter problems in the course of its respective contribution including financial contribution, the Parties agree to examine, in the framework of the Joint Tripartite Committee, ways of achieving the planned contributions and review, to the extent necessary, the objectives and the content of this Agreement.

ARTICLE 14 - PARTICIPATION BY THIRD PARTIES

This Agreement may be opened to the participation of other parties who are able to contribute to the fulfilment of the tasks under this Agreement. Amendments in accordance with Article 13 above shall then be made for that purpose.

ARTICLE 15 - SETTLEMENT OF DISPUTES

15.1 Any disputes which may arise between the Parties relating to the interpretation or application of this Agreement or its Annexes shall be submitted for direct negotiations within the Joint Tripartite Committee.

15.2 In case of it not being possible to settle the dispute in accordance with paragraph 1, any Party may notify the others of the appointment of an arbitrator; the other Parties must then appoint their arbitrator within two months.

15.3 The Joint Tripartite Committee shall appoint two additional arbitrators by unanimous decision.

15.4 The arbitrators' decisions shall be taken by majority vote.

15.5 Each party to the dispute must take the appropriate steps required to implement the decision of the arbitrators.

ARTICLE 16 - ANNEXES

This Agreement contains Annexes 1 and 2 which form an integral part hereto. Article 5.4 above contains the procedure for updating of the Annexes.

ARTICLE 17 - ENTRY INTO FORCE AND TERMINATION

17.1 This Agreement shall enter into force on the date of signature thereof by the Parties, and shall remain in force until completion of the activities as specified in Annexes 1 and 2 or until such time as this Agreement is replaced by another cooperation agreement.

17.2 Notwithstanding paragraph 1 above, any Party may, however, terminate the Agreement upon completion of the EGNOS technical and operational validation, by notifying the other Parties of its intention six months in advance.

17.3 In case of termination of the Agreement in accordance with paragraph 2 above, the Parties shall agree on all appropriate measures to be taken.

The present Agreement is signed in three original copies in the Danish, Dutch, English, French, German, Greek, Italian, Finnish, Portuguese, Spanish, Swedish languages, each of which is to be considered equally authoritative for **purposes** of interpretation.

In witness whereof, the undersigned, having been duly authorised, sign this Agreement.

Done at ....., on the day of .....

For the European Space Agency

.....

Jean-Marie Luton, Director General

For the European Community

.....

For the European Organisation for the Safety of Air Navigation

.....

Yves Lambert, Director General

ANNEX 1

1. Introduction

The scope of cooperation between the Parties, as set out in Article 3 of this Agreement is detailed in the activities below.

2. European Contribution to GNSS-1 : Article 3 a)

This contribution involves the development of augmentation systems to the current satellite based radionavigation and positioning systems in order to meet civil user requirements (land, sea, air, and other non-transport user requirements) over Europe and over the whole geostationary broadcast areas.

It is composed of the following major activities :

- **Identification** of user requirements.
- Development, testing, technical and operational validation of the European Geostationary Navigation Overlay Service (EGNOS), which is a wide area augmentation of existing satellite based radionavigation and positioning systems, relying on the use of geostationary satellites, providing additional satellite ranging capability, integrity and wide area differential information to users.
- Additional augmentation (e.g. local area augmentation, receiver autonomous integrity monitoring, etc.).
- Development, testing and validation of user equipment.
- Certification of European GNSS-1 elements.

A more detailed description of the European contribution to GNSS-1 is provided in Annex 2.

3. Transition to a full operational capability of GNSS-1: Article 3 b)

The Parties undertake to identify mechanisms to accommodate possible further inputs to attain, a full operational capability of GNSS-1, which will require in particular additional space capacity.

4. Preparatory Work for GNSS-2 : Article 3 c)

The parties will liaise on preparatory work for the definition and design of GNSS-2, including studies for the preparation of an in-orbit demonstration to be undertaken in the time-frame 1997-2000. Candidate system configurations shall be studied to subsequently identify and initiate critical research and technology developments and carry-out early trials of selected GNSS-2 concepts.

The preparatory work for GNSS-2 includes the following:

- Mission definition **(identification of additional user requirements**, signal design requirements, demonstration system applications definition).

- System definition (system options, demonstration system design, definition of demonstration programme).

- **Predevelopment activities in preparation of the GNSS-2 technology.**

- Development of an experimental navigation payload and the performance of system simulation tests and in-orbit flight demonstrations.

- GNSS-2 architectural design (design of a complete navigation satellite system including its logistic and operational aspects).

ANNEX 2

1. Introduction

This Annex provides a breakdown of the contributions of the Parties referred to in Article 4. They are related to the design, development and implementation of EGNOS up to the completion of a first implementation phase involving the use of **at least** two **geostationary** navigation transponders. A description of EGNOS is given below.

The EGNOS system is an augmentation of existing satellite-based radio navigation and positioning systems using geostationary satellites that shall enhance the performance of these systems over Europe and more generally over the whole geostationary broadcast area(s).

By using navigation transponders on geostationary satellites and processing data from a network of terrestrial monitoring stations, EGNOS shall provide additional satellite ranging capability, service integrity and Wide Area Differential (WAD) correction data. **The aim of the WAD service is to improve the accuracy of existing satellite-based radio navigation systems, in particular over Europe.** The EGNOS system will improve the overall satellite navigation service availability.

The EGNOS infrastructure shall consist of:

- Mission Control Centres (MCCs)
- Navigation transponders on geostationary satellites
- Navigation Land Earth Stations (NLESs) for accessing the navigation transponders
- Ranging and Integrity Monitoring Stations (RIMSs)
- **Upgraded RIMSs** for accurate orbit determination of the geostationary satellites hosting the navigation transponders.
- A network of reference stations for verifying the integrity of the WAD corrections computed by EGNOS. **Simplified RIMSs will be used as reference stations.**

2. ESA Contribution

ESA shall contribute through the implementation of its ARTES programme, in particular, Element 9 thereof.

In particular, ESA shall undertake the following activities:

- EGNOS project management
- Mission Analysis and System Definition
- Early trials
- Test and simulation

- Ranging system development
- Integrity system development
- WAD system development
- Testing and technical validation of EGNOS, including provisions for ground communications and MCCs running costs during the testing and validation period.

3. EUROCONTROL Contribution

EUROCONTROL shall undertake, in the context of its satellite navigation applications activities and in close cooperation with the International Civil Aviation Organisation (ICAO), the following :

- Provision of civil aviation user requirements.

- Operational testing and validation for civil aviation GNSS-1 users. This shall include static ground measurements, dedicated flight trials and data recording campaigns on commercial airliners.

- Support to the European activities to ensure that GNSS is operationally acceptable for civil aviation. This work shall be carried out with the widest cooperation possible within the civil aviation environment, including the Joint Aviation Authorities (JAA).

4. EC Contribution

The EC shall undertake, in accordance with its relevant procedures in the context of] the Trans-European Network and the Framework Programmes on Research and Development, to contribute to the following tasks:

- Consolidation of user requirements relative to GNSS-1;
- Design, development and support of the standardisation effort of GNSS-1 user equipment, for all types of application (maritime, civil aviation, land transport);
- Analysis of the integration aspects in the user vehicles, in preparation of validation trials;
- Provision of **at least** two satellite links for the implementation of EGNOS (**in particular** lease of AOR-E and IOR Inmarsat III transponders and of necessary facilities in corresponding NLESs);
- Performance of trials to validate user requirements and user equipment prototypes in operational conditions.

FINANCIAL STATEMENT

1. TITLE OF OPERATION

Agreement between the European Community, the European Space Agency and the European Organisation for the Safety of Air Navigation on a European contribution to the development of a Global Navigation Satellite System (GNSS).

2. BUDGET HEADINGS INVOLVED

B2-702	Specific measures, in particular in transport safety
B2-704	Establishment and development of a common sustainable transport policy
B5-700	Financial support for projects of common interest in the trans-European transport network
B6-7111	Telematics applications of common interest
B6-7161	Transport (research programme)

3. LEGAL BASIS

Articles 74, 84(2) and 129c of the Treaty.

Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network.
Council Regulation (EC) No 2236/95 of 18 September 1995 laying down general rules for the granting of Community financial aid in the field of trans-European networks.
Council Decision of 23 November 1994 adopting a specific programme for research and technological development, including demonstration, in the field of telematics applications of common interest (1994 to 1998).
Council Decision of 15 December 1994 adopting a specific programme for research and technological development, including demonstration, in the field of transport (1994 to 1998).

4. DESCRIPTION OF OPERATION

4.1 General objective

The operation proposed must allow a European contribution to the development of a worldwide multimodal navigation satellite system.

The objective of establishment of a navigation satellite system is to improve the productivity of transport systems by placing at the disposal of users a system allowing geographical positioning. This operation therefore

contributes to development of sustainable and safe mobility for persons and goods, one of the fundamental objectives of the common transport policy.

The operation aims at conclusion of an agreement to ensure convergence of the resources of the three organisations concerned.

4.2 Period covered and arrangements for renewal or extension

1997-2000.

5. CLASSIFICATION OF EXPENDITURE OR REVENUE

5.1 Non-compulsory expenditure

5.2 Differentiated appropriations

5.3 Type of revenue involved

Not applicable.

6. TYPE OF EXPENDITURE

Three types of expenditure are planned:

- subsidy for joint financing with contributions from ESA and EUROCONTROL;
- research and development activities (framework programme);
- feasibility studies (maximum Community contribution: 50%) eligible for financial aid for the trans-European transport network.

7. FINANCIAL IMPACT

7.1 Method of calculating total cost of operation (definition of unit costs)

7.2 Itemised breakdown of cost

ECU million (current prices)

Breakdown	1997	1998	1999	2000	N + 5 and subs. yrs	Total
Transport projects	0.7					0.7
Feasibility studies	6.5	9	9	5		29.5
Transport research	1					1
Telematics research	4					4
TOTAL	12,2	9	9	5		35,2

7.3 Indicative schedule of appropriations

ECU million

	1997*	1998*	1999*	2000*	N + 5 and subs. yrs	Total
Commitment appropriations	12.2	9	9	5		35.2
Payment appropriations						
1997	4.95					
n + 1	3.25	4.5				
n + 2	4	4	4			
n + 3		0.5	5	2		
n + 4				3		
n + 5 and subs. yrs						
TOTAL	12.2	9	9	5		35.2

* The definitive amounts are set by the budgetary authority each year.

8. FRAUD PREVENTION MEASURES

The operations proposed will be financed by the R&D framework programme and the trans-European transport network. The fraud prevention measures provided for by these instruments will apply. Regulation 2236/95 laying down general rules for the granting of Community financial aid in the field of trans-European networks includes fraud prevention measures (inspections, reporting, monitoring, evaluation, etc.), in particular Articles 12(4) and (5) on regular on-the-spot checks by Commission staff and Articles 15(5) and (7) on monitoring and evaluation. Similar measures exist for the R&D framework programme.

9. ELEMENTS OF COST-EFFECTIVENESS ANALYSIS

9.1 Specific and quantified objectives; target population

The European contribution to the development of a global navigation satellite system requires substantial resources (see Commission communication COM(94)248 of June 1994 on satellite navigation services). Cooperation between the three organisations concerned by the Agreement is the only means of ensuring this development of primordial importance to Europe (for socio-economic, industrial and transport safety reasons). Involvement of the three organisations will ensure a total budget of approximately ECU 200 million for the European project between 1996 and 2000.

The principal objective can be subdivided into several specific objectives to allow evaluation of the operation:

- improving the efficiency of the transport system (increasing air space capacity, reducing the environmental impact of transport, monitoring consignments of dangerous substances, etc.);

- closer cooperation between the departments concerned at European level;

- opening up new markets;

- making the European industry more competitive;

- providing assistance for technological development in the space sector (access to new satellite technology).

9.2 Grounds for the operation

- The Community contribution must be seen in the context of the measures to implement the guidelines for the development of the trans-European transport network, particularly the navigation and positioning network. Organised cooperation on the resources available in Europe is the only means of ensuring a role for the Community in the development of a global navigation satellite system.

- Community action will allow establishment of space infrastructure to the benefit of Europe as a whole. Europe-wide transmission of navigation signals by satellite requires a project on this scale. Moreover Council Resolution 378/94 of 19 December 1994 called on the Commission to prepare proposals along these lines. The Council in turn adopted a negotiating mandate in June 1996.

9.3 Monitoring and evaluation of the operation

The operation must be monitored and evaluated on the basis of the following criteria:

- increase in air space capacity, reduction of the environmental impact of transport and monitoring of consignments of dangerous substances;
- access to new satellite technology;
- interoperability of navigation systems;
- making the European industry more competitive;
- opening-up of new markets (commercial applications for navigation services).

10. ADMINISTRATIVE EXPENDITURE (PART A OF SECTION III OF THE GENERAL BUDGET)

The administrative resources necessary will be provided by an annual Commission decision allocating resources, taking account, in particular, of the additional staff and amounts granted by the budgetary authority.

10.1 Impact on number of staff

Type of post	Staff allocated to management of the operation		of which	Duration: 4 years (1997-2000)
	permanent	temporary	from existing resources within the DG or departments concerned from supplementary resources	
Officials or temporary agents | A | B | C	2.0 1.0 0.5		2 1 0.5	
Other resources				
TOTAL	3.5		3.5	

In the case of supplementary resources, indicate the rate at which they will have to be provided

10.2 Total financial impact of the supplementary human resources

(ECU)

	Amount	Method of calculation
Officials Temporary agents Other resources (indicate budget heading)		
TOTAL		

The amounts express the total cost of the additional posts over the total duration of the operation (if fixed) or for 12 months (if indefinite).

The expenditure on the human resources required for the operation will be covered by existing resources: 3.5 officials (Titles A1, A2, A4 and A5) or ECU 350 000 per year.

10.3 Increase in other operating expenditure as a result of the operation

(ECU)

Budget heading (number and title)	Amount	Method of calculation
TOTAL		

Estimated expenditure on missions, by redeployment of existing resources: Article A-130: ECU 14 800 (6 missions inside the Community, 5 outside [1997]).

ISSN 0254-1475

COM(97) 442 final

DOCUMENTS

EN 07 15 08

Catalogue number : CB-CO-97-452-EN-C

ISBN 92-78-24357-4

Office for Official Publications of the European Communities

L-2985 Luxembourg

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